MPA Materials Matter

Fall 2020
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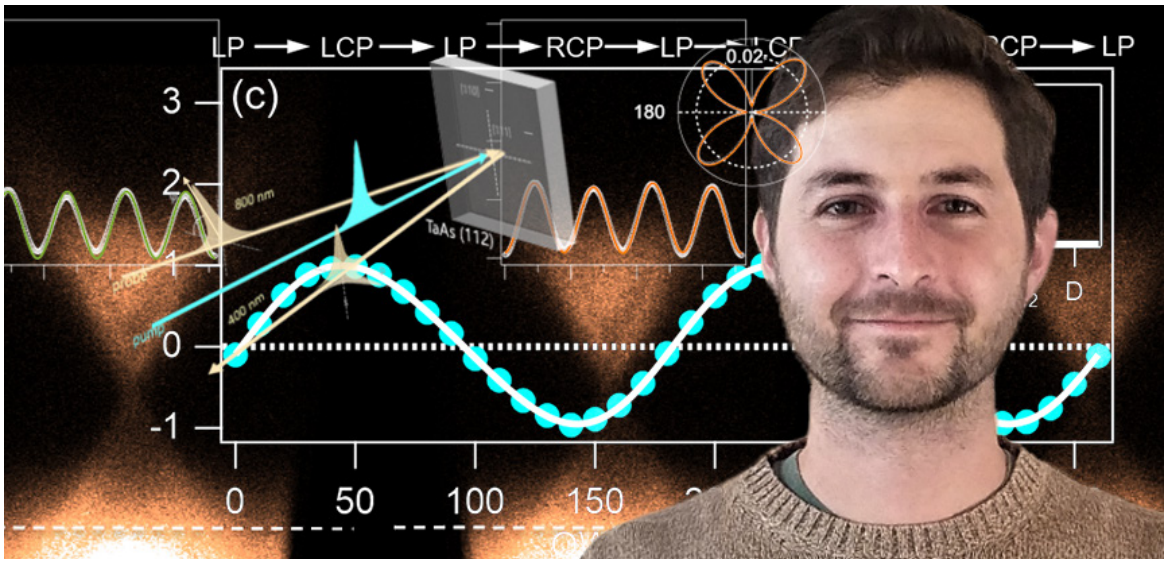
INSIDE



Nick Sirica

Bright light, big physics

When Nick Sirica shines a light on new or exotic materials, he wants to see them squirm. Sirica uses intense light pulses to strongly perturb materials systems far from their preferred state of being, "which on occasion can produce some pretty amazing results," he said.

Those results include insight into the physics controlling the behavior and properties in materials key to future quantum information and computing applications.

Sirica is a staff scientist on the Laboratory for Ultrafast Material and Optical Science (LUMOS) team in the Center for Integrated Nanotechnologies (MPA-CINT). With a PhD in physics from the University of Tennessee, he joined Los Alamos in 2017 as a Seaborg Institute Postdoctoral Fellow. He was drawn to the Lab by the potential to transform the concepts he studies into applied technologies.

> "(At the Laboratory) an idea born out of fundamental science can be ushered from proof-of-principle into state-of-the-art technology through bringing together a diverse group of individuals with varying backgrounds and skill sets."

At the Laboratory, "an idea born out of fundamental science can be ushered from proof-of-principle into state-of-the-art technology through bringing together a diverse group of individuals with varying backgrounds and skill sets," he said. During his time at Los Alamos Sirica said he has seen that happen with metamaterials and he would like to "do my part in seeing topological materials follow a similar course of action." Such materials offer potential for meeting the demands

continued on page 4 ▶

From Andrew's desk . . .

We are all definitely experiencing an unprecedented event with the COVID-19 pandemic. So, I will start my comments with a reminder to do your part in trying to limit the spread of COVID-19 by properly wearing a mask in public settings and where you cannot physically distance, regularly washing your hands, and avoiding large gatherings. It is the cumulative effect of all our efforts that will have the greatest impact limiting the spread of the disease.

Even under these challenging circumstances, staff in the Materials Physics and Applications (MPA) Division continue to perform outstanding technical work at Los Alamos National Laboratory. This issue of *MPA Materials Matter* highlights several recent accomplishments from our staff. In particular, MPA staff have continued to build on our strengths in the areas of basic and applied energy research and development. Over the last several months, scientists from multiple groups in MPA Division had a significant role in developing the recently awarded Quantum Science Center, which is funded by the DOE Office of Science, and led by Oak Ridge National Laboratory. In addition, George Goff (Materials Synthesis and Integrated Devices, MPA-11) and Jim Werner (Center for Integrated Nanotechnologies, MPA-CINT) successfully developed and received funding for new proposal efforts written in response to open calls put out by the DOE Office of Science Basic Energy Sciences and Biological and Environment Research programs, respectively. Both the Quantum Science Center and Jim Werner's new project are heavily focused on quantum science, which will be an area of emphasis for MPA Division in the coming years. In addition, Rod Borup and Piotr Zelenay (MPA-11) led writing efforts that were successful in obtaining funding for two new multi-national laboratory consortia. The LANL Fuel Cell Program also has a leadership role (Rangachary Mukundan, MPA-11) in H2NEW, which is a recently established consortium co-led by the National Renewable Energy Laboratory and Idaho National Laboratory. These consortia, funded by the DOE Hydrogen and Fuel Cell Technologies Office, are critical to the future technical success and funding portfolio of the LANL Fuel Cell Program.

> "Even under these challenging circumstances, staff in the Materials Physics and Applications (MPA) Division continue to perform outstanding technical work at Los Alamos National Laboratory."

In addition, researchers in MPA Division continue to gain recognition for their technical work. Rod Borup received the LANL Fellows' Prize for Leadership, and Sarah Park, who is now an early career staff member on the Fuel Cell Team in MPA-11, received a postdoctoral research award from DOE. Nick Dallman (MPA-Quantum, MPA-Q) and Mahlon Wilson (MPA-11) co-led a successful R&D 100 Award package, and several more of our staff in MPA were involved in R&D 100 Award packages that made the finalist list. In addition, Vivian Zapf and Marcelo Jaime (National High Magnetic Field Laboratory-Pulsed Field Facility, MPA-MAGLAB) have recently been elected into new leadership roles with the American Physical Society, which is another indication of the impact MPA staff have in the broader scientific community.

I am always impressed and proud of the high-quality work we perform in MPA Division and the impact that we have in the broader technical community. Please continue to send me or your local line managers e-mails describing your accomplishments, so we can be sure to highlight the good news that is still occurring at this moment in time.

Best wishes and stay well,

MPA Division Leader Andrew Dattelbaum ■

From Steve's desk . . .

I have now been group leader of MPA-11 for a little over five months, and to be honest I still find it surprising that I am part of this amazing collection of people. As this is my first entry in *Materials Matter* I thought I would take the opportunity to introduce myself and how I came to be in this position.

> "As this is my first entry in *Materials Matter* I thought I would take the opportunity to introduce myself and how I came to be in this position."

I started my career at Los Alamos a little more than 30 years ago as a summer student in the Accelerator Operations and Technology Division. What I did not appreciate at the time was that our accelerator program in those years was arguably preeminent in the world. Not only were we operating the most powerful proton accelerator on the planet at the time, now called LANSCE, but R&D had started on the newly conceived Dual-Axis Radiographic Hydrodynamic Test Facility (DARHT), and there were three other research accelerators in construction or operation. Two of those were dedicated to fundamental research of free electron laser physics, laying the enabling ground work for the x-ray free electron laser facilities we see being built around the world today.

In any case, the work was exciting, the people were great, and I found myself wanting to stay. I was able to convince my academic advisors, and my LANL mentors, to allow me to do my PhD thesis work here. Upon graduation, I was converted to staff and spent the next 15 or so years happily doing accelerator and applied electrodynamics research. However, as my career progressed, I was increasingly encouraged to consider moving to a management track, which planted a seed for the future (and was perhaps a commentary on my technical abilities).

After yet another continuing resolution and budget cuts forced by sequestration disrupted one of my group's primary programs, I and several of my colleagues found ourselves moving on to other LANL missions. For me, that meant doing ionosphere physics and computer modeling for the nuclear detection program in ISR Division, and working on the MaRIE (Matter Radiation Interactions in Extremes) x-ray free electron conceptual design. At the same time, I found myself increasingly unhappy with the way the partial dissolution of my group was handled.

Rather than continue to complain, and having a rather soft head, I decided that the best way to have a voice for change was to finally make that jump to management. Three years ago, I applied to and was given the job of deputy group leader of J-5: DARHT Physics, Pulsed Power and Diagnostics. Earlier this year, I applied to be group leader of MPA-11, having no clue as to the impact of the COVID-19 pandemic that was to come. After somehow surviving two very awkward virtual interviews, the hiring committee and Andrew inexplicably chose me for the position. A decision for which I am very grateful.

MPA-11 Group Leader Steve Russell ■

Sirica cont.

of more robust, fault-tolerant quantum computers and for the design of novel ultra-low-energy electronic transistors capable of switching between topological phases. They are also a promising vehicle for confirming the existence of the theorized magnetic monopole—or "one-sided magnet."

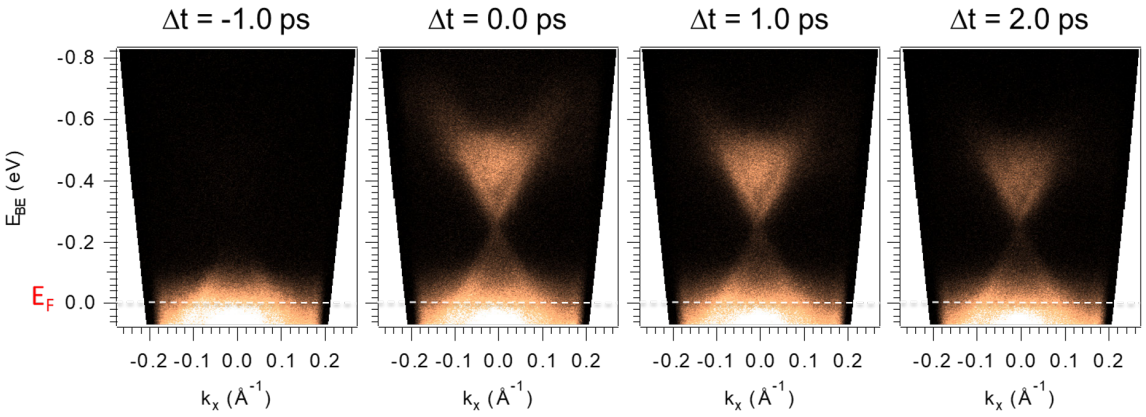
His current work includes using nonlinear optical probes to study a new class of compounds known as topological semimetals.

LUMOS teammate Rohit Prasankumar (MPA-CINT) said Sirica's "deep knowledge of condensed matter physics and his ability to quickly learn new physics and experimental methods have enabled him to expand our understanding of these materials using nonlinear optical spectroscopy."

This understanding includes the generation mechanisms underlying photocurrent excitation in topological semimetals and how those photocurrents affect materials properties, like the symmetry of electronic states. Building on this knowledge, Sirica said the team will use a newly rebuilt time- and angle-resolved photoemission spectrometer to directly probe changes in the electronic structure following photocurrent excitation.

"I have a sincere appreciation for the rigor of physics, particularly how much can be learned by simply considering the symmetry of a problem," he said. "Through growing new materials, or looking at old materials—including geologic minerals—from a different perspective, a window into physics beyond the standard model can be opened. By exploring the myriad of possibilities that condensed matter systems have to offer, fundamental insights into not only the many-body problem, but concepts in high-energy physics can be grappled with—and ultimately tamed for use as future technologies. I find this the most exciting part of working in this field."

By Virginia Grant, CEA-CAS ■



Snapshots of electron dynamics in the topological insulator Sb_2Te_3 taken by Sirica using time- and angle-resolved photoemission spectroscopy.

Nick Sirica's favorite experiment at Los Alamos (so far!)

Who: Ron Tobey, who was a visiting Rosen scholar at the time, and I. Over the course of a day, we would brainstorm an experiment over coffee and then find ourselves in the lab making it happen. It was a really exciting time.

Why: Photocurrents are predicted to provide a signature of non-trivial topology in topological semimetals like TaAs.

What: The experiment entailed measuring a contact-free, light-induced current detected through the emission of terahertz (10^{12} Hz) radiation. We used an amplified ultrafast laser system and a couple of nonlinear optical crystals to detect the free space emission of terahertz radiation from the Weyl semimetal TaAs.

Where: Center for Integrated Nanotechnologies

The result: The verdict is still out since it was only last year that these results were published (*Phys. Rev. Lett.* 122, 197401 [2019]) but they laid a foundation for us to explore some of the consequences that photocurrent generation have in these materials. More related work is underway, by experimentalists and theorists at the Lab.

MPA bolsters Lab's efforts to advance quantum technology, resilient energy projects

DOE Office of Science center to usher in new era of quantum tech, innovation

Materials Physics and Application (MPA) Division's expertise in quantum matter will be essential in advancing the scientific objectives in a major research thrust in a collaboration charged by DOE with developing quantum technologies. The collaboration is part of the $115M Quantum Science Center (QSC), which will be headquartered at Oak Ridge National Laboratory.

The QSC's research goals are organized around three scientific thrusts—quantum materials discovery and design, quantum devices and sensors for discovery science, and quantum simulations and algorithms. Andrew Sornborger (Information Sciences, CCS-3) will lead the simulations and algorithms thrust.

MPA researchers will synthesize candidate topological matter, build devices of these materials, develop improved sensors, develop and deploy new algorithms for quantum metrology to enhance sensitivity beyond the standard quantum limit, and measure the physical properties of the quantum matter—with the ultimate goal of demonstrating the presence and manipulation of non-Abelian excitations that could form the basis for quantum technologies.

From computers exponentially more powerful than today's leading supercomputers to sensors with unprecedented precision, quantum technologies promise to greatly increase understanding of the world and, by extension, fundamentally transform it.

The center supports the National Quantum Initiative Act of 2018 by enhancing America's national security and retaining its global leadership in scientific research and development—goals that require broad expertise and capabilities.

Quantum materials exhibit exotic properties under specific conditions, and the center will transition this knowledge to the private sector for use in practical applications such as computers and sensors.

Development of the next generation of scientists and engineers is integral to the QSC's mission. By engaging students and postdoctoral associates in research activities at partnering institutions, the QSC will offer a rich environment for cultivating the expertise necessary to ensure America leads the quantum revolution.

Along with Los Alamos, partner organizations include Oak Ridge National Laboratory (QSC headquarters); Purdue University; Microsoft; Fermilab; Pacific Northwest National Laboratory; University of California, Berkeley; University of Maryland; Harvard University; University of Washington; University of California, Santa Barbara; IBM; Caltech; ColdQuanta; University of Tennessee, Knoxville; and Princeton University.

The QSC is one of five multidisciplinary National Quantum Information Science Research Centers supported by the DOE's Office of Science. ■

Ionic liquids project seeks to develop strategies to purify materials critical to many modern technologies

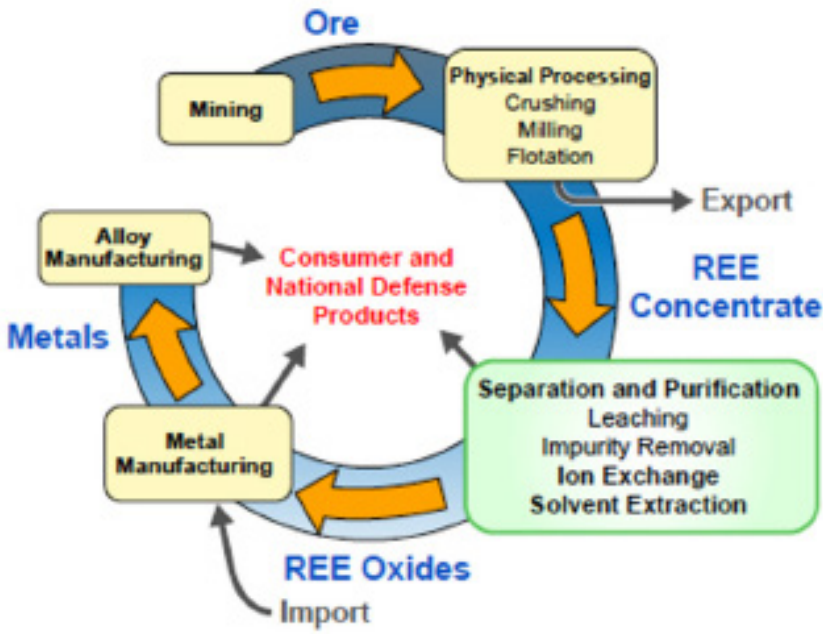
The DOE Office of Science recently announced a new $20M program aimed at furthering basic science to support a stable supply chain of rare earth elements. These critical materials are used in many advanced materials and modern technologies, but are prone to supply chain issues due to geo-political tensions and dependence on foreign supplies. LANL has been awarded $4.2M over three years to develop novel separations strategies using ionic liquids for recovering and purifying rare earth elements. The work builds on a novel separations capability and previous Laboratory Directed Research and Development Program investments.

Ionic liquids are low-melting salts, often containing an asymmetrical organic cation and an (in)organic anion, which offer a wide range of tunable physical properties (e.g., viscosity, hydrophobicity, conductivity). They have negligible vapor pressure, are nonflammable, and exhibit a wide range of thermal and electrochemical stability. These properties can be leveraged in separations techniques such as solvent extraction, ion exchange, dissolution, crystallization, and electrorefining.

In "Exploiting the emergent behavior in ionic liquids for advanced rare earth separations," Principal Investigator George Goff (Materials Synthesis and Integrated Devices, MPA-11) and collaborators from LANL (MPA, Chemistry, and Theoretical divisions), University of Notre Dame, University of Tennessee, Knoxville, and University of Texas at Austin will take a multi-faceted, multi-scale approach to tackle this challenging separations problem. They will use recent advances in molecular-level design to develop ionic liquids with improved physical and thermodynamic properties in order to control rare earth element complexation and enable novel selective separations strategies. By integrating theory (quantum mechanical and molecular dynamics simulations) and experiment (synthesis and analytics), the team will design ligands for tuning molecular structure and reactivity of lanthanide complexes and for understanding and controlling the bulk-phase properties of ionic liquids to ultimately exploit these behaviors in multi-component mixtures for selective dissolution, extraction, and separation of rare earth elements. The team will take advantage of the unique magnetic properties of the lanthanides as well as the superior electrochemical stability of ionic liquids to access uncommon oxidation states of some of the lanthanides. Combining these unusual chemistries with emergent phenomena in ionic liquids, such as unique interfacial ordering effects that occur in the presence of external electromagnetic fields, will provide the fundamental basis for potential new separations technologies.

The Los Alamos-led project is one of five DOE national laboratory teams, chosen by competitive peer review as part of the call for "Materials and chemical science research on critical materials," sponsored by the Office of Basic Energy Sciences within DOE's Office of Science.

Technical contact: George S. Goff ■



Production cycle for critical rare earth elements. The new LANL project funded by the DOE Office of Science seeks to develop the fundamental science to enable new separations and purification technologies.

Fuel cell consortia to leverage MPA energy expertise, leadership

As part of the government effort to drive improvements in hydrogen and fuel cell work, several new consortia have been awarded—and MPA-11 scientists co-lead two of them, partnering on a third.

The new consortia, funded by the DOE's Hydrogen and Fuel Cell Technologies Office within the Energy Efficiency and Renewable Energy Office, will kick off in early 2021. The three multi-laboratory efforts will include approximately $109M in R&D government funding over five years. "Los Alamos National Lab is proud to be involved in these three consortia, both as co-leads and as a partner," said Program Manager Rod Borup. "These are the joint research projects that address both near-term commercialization needs and the longer-term R&D which will make fuel cells competitive to today's internal-combustion engines in terms of efficiency, overall cost of ownership, and importantly, zero emissions."

Borup is co-director of the Million Mile Fuel Cell Truck (M2FCT), which is co-led by Los Alamos and Lawrence Berkeley National Laboratory. The M2FCT is funded over five years at $10M/year ($50M total). Additional partners are Oak Ridge, Argonne, Brookhaven, and Pacific Northwest national laboratories, the National Renewable Energy Laboratory (NREL), and the National Institute of Standards. The M2FCT is a large-scale, comprehensive effort to enable widespread commercialization of hydrogen fuel cells for heavy duty applications.

Piotr Zelenay is co-director of ElectroCat 2.0, which is co-led by Los Alamos and Argonne. This is the second iteration of a three-year, $3M/year ($9M total) project, with Oak Ridge and NREL as partners. This research effort seeks to continue the existing ElectroCat (for Electrocatalysis) Consortium based on its widely recognized success and world-class capabilities developed during its first phase (see the article on the next page for more information). This project will focus on the most promising approaches for platinum-group-metal-free catalysts that can meet the durability required in heavy-duty applications as well as cost, efficiency, and other key metrics.

A third consortium, H2NEW, is co-led by NREL and Idaho National Laboratory, with Los Alamos participating along with Berkeley, Argonne, Oak Ridge, Pacific Northwest, and Livermore national laboratories. The consortium is funded over five years, at $10M/year ($50M total). H2NEW is a comprehensive, concerted effort focused on overcoming technical barriers to enable affordable, reliable, and efficient electrolyzers. Both high- and low-temperature electrolyzers will have roles in enabling the efficient and affordable production of hydrogen in a future clean energy economy.

Technical contact: Rod Borup ■

MPA staff in the news . . .

Zelenay, multi-lab ElectroCat team win DOE merit award

Piotr Zelenay

Piotr Zelenay (Materials Synthesis and Integrated Devices, MPA-11) has received a 2020 DOE Hydrogen and Fuel Cells Program merit review award for his leadership in the ElectroCat Consortium. The research group aims to increase U.S. competitiveness in manufacturing fuel cell electric vehicles and other fuel cell energy conversion devices by addressing the primary challenges to the widespread implementation of this technology.

The fuel cell R&D award was presented to consortium co-leaders Zelenay and Deborah Myers (Argonne National Laboratory) and steering committee members K.C. Neyerlin (National Renewable Energy Laboratory), and David Cullen (Oak Ridge National Laboratory) for their exemplary teamwork and technical prowess demonstrated in leading the consortium, created in 2016 as part of the Energy Materials Network. The four honorees lead a large team of scientists from their respective institutions and the wider platinum-group-metal (PGM)-free fuel cell catalyst community. Since the consortium's inception, the team has nearly doubled the kinetic performance of PGM-free electrodes to achieve the highest performance reported at this time.

Zelenay, a LANL Fellow, has been at the Lab since 1997 and holds Ph.D. and D.Sc. (habilitation) degrees in chemistry from the University of Warsaw, Poland.

Each year, the DOE Hydrogen and Fuel Cell Technologies Office presents awards for outstanding contributions to the overall efforts of the DOE Hydrogen and Fuel Cells Program and for achievements in specific technical areas.

Technical contact: Piotr Zelenay ■

ElectroCat
Electrocatalysis Consortium

Park wins postdoctoral hydrogen and fuel cell award

Eun Joo (Sarah) Park

Eun Joo (Sarah) Park has won the Hydrogen and Fuel Cell Office postdoctoral award from DOE's Office of Energy Efficiency and Renewable Energy Hydrogen and Fuel Cell Technologies Office for her work at Los Alamos advancing fuel cell technology.

Park's work focuses on ionomers for alkaline membrane fuel cells and polymer electrolytes for high temperature fuel cells. The inaugural award recognizes postdoctoral fellows from DOE national laboratories for outstanding contributions in identifying research solutions to hydrogen and fuel cell research challenges.

"This award gives me a huge motivation to keep trying to contribute to the advancement of hydrogen and fuel cell technologies," said Park, who is now an MPA-11 scientist.

The Laboratory received honorable mentions for the work of Chenyu Wang, Daniel Leonard, and Dongguo Li (all MPA-11).

Technical contact: Eun Joo (Sarah) Park ■

Doan, Padmanabhan recognized for 'Science in 3' presentations

Hung Doan (MPA-11) and Prashant Padmanabhan (Center for Integrated Nanotechnologies, MPA-CINT) received honorable mentions at the 2020 "Science in 3" competition. In the career development event organized by the Postdoc Program Office, Laboratory postdoctoral researchers presented their work to a general audience in under three minutes.

In "The effect of moisture content on the acoustic characteristic of biomass feedstocks–corn stover," Doan described an in-line sensing technique based on acoustic time-of-flight and signal amplitude measurements to sense the moisture content of corn stover. Inconsistent moisture in this renewable energy source is a severe challenge for the bioenergy industry.

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MPA staff cont.

Hung Doan

Prashant Padmanabhan

Doan, who has a PhD in biophysics from Texas Christian University, is mentored by Cristian Pantea and Troy Semelsberger (both MPA-11). His research focuses on developing in-line acoustic sensors for characterizing moisture content of corn stover feedstock and real-time monitoring of the wear and erosion of plug-screw feeders used in the biomass industry.

In "The magnon-phonon tango: Ultrafast spin-lattice coupling in 2D magnets," Padmanabhan described ultrafast experiments that reveal a strong exchange-mediated coupling between lattice vibrations and spin oscillations in CrI_3, which manifests as a coherent dance between magnons and phonons. The work represents the first step on the path toward high-speed optical control of magnetic order at the nanoscale, opening the possibility of a wide range of new opto-magnetic and spintronic devices.

Padmanabhan, who has a PhD in applied physics from the University of Utah, is mentored by Rohit Prasankumar and Dmitry Yarotski (both MPA-CINT). His research focuses on the ultrafast optical manipulation of bulk and nanoscale materials possessing order, correlations, and topologically protected phases.

Also presenting from MPA-CINT were Ekaterina Dolgopolova and Natalie Pace.

Technical contacts: Hung Doan, Prashant Padmanabhan ■

Jaime, Zapf named to APS unit leadership

Marcelo Jaime and Vivien Zapf (National High Magnetic Field Laboratory-Pulsed Field Facility, MPA-MAGLAB) have been elected vice chairs of the American Physical Society (APS) Topical Group on Magnetism and its Applications (GMAG) and the Division of Materials Physics (DMP), respectively. They will each serve a four-year period, including as chair of their organizations in 2022.

GMAG is one of the fastest-growing scientific sectors of the APS and provides members a means to connect with others in the magnetism community. The DMP brings together researchers involved in applying fundamental condensed matter concepts to complex and multiphase media, including materials of technological interest.

At the mag lab Jaime has developed techniques to measure thermal properties in very high magnetic fields, pulsed and continuous, at low temperatures. Zapf uses the record high magnetic fields of the mag lab to study magnetism and its interaction with ferroelectricity. Both are APS Fellows.

Technical contacts: Marcelo Jaime, Vivien Zapf ■

Marcelo Jaime

Vivien Zapf

MPA staff recognized for distinguished performance supporting Lab mission

For their essential contributions to the Lab's mission, Jonathan Gigax and Abul Azad (both MPA-CINT), Eric Brosha (MPA-11), and Ray Newell (Quantum, MPA-Q) were recognized with 2019 LANL Distinguished Performance Awards. Every year, the awards recognize individuals and teams who have distinguished themselves in pursuit of this mission through outstanding scientific, technical, operational, community service, and/or administrative contributions.

Gigax was a member of the Modular Integrated Nondestructive Test System team; Azad, the B61 Electromagnetic Radiation Joint Test team; and Brosha and Newell, the SuperCam Mars Rover Instrument team. ■

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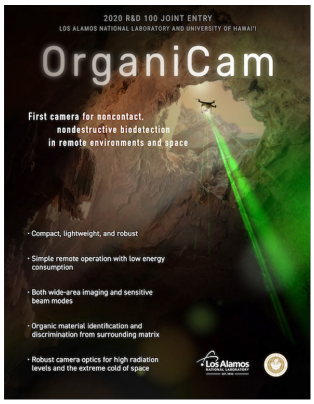
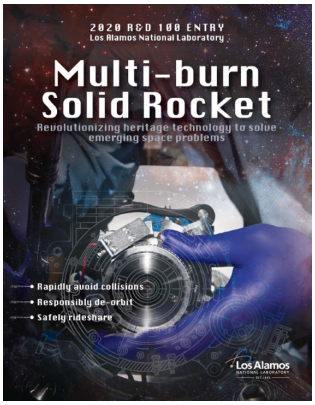
MPA staff cont.





Top technology scores R&D 100 Awards

MPA staff were members of four Laboratory teams recognized in this year's R&D 100 Awards competition. The "Oscars of invention" honor the latest and best innovations and identify the top technology products of the past year. Receiving R&D 100 Awards were the following.

- Multi-Burn Solid Rocket provides multiple independent thrusts from a single solid rocket to enable small satellites to maneuver, avoid debris, and de-orbit. MPA team members: Nicholas Dallman, Ian Shelburne, Kassidy Shedd (all MPA-Q); Kavith Chintam, Mahlon Wilson (both MPA-11).
- SEDONA (Spectroscopic Detection of Nerve Agents) is the only portable screener to accurately detect the chemical nerve agents in unopened bottles, providing results in seconds. MPA team member: Per Magnelind (MPA-Q).
- OrganiCam is the first camera for noncontact, nondestructive biodetection in remote environments and space. MPA team member: Raymond Newell (MPA-Q).

Recognized as a 2020 R&D 100 Finalist was the Electrochemical Hydrogen Contamination Detector. MPA team members: Eric Brosha, Christopher Romero, Mahlon Wilson, Rangachary Mukundan, Cortney Kreller, Tommy Rockward (all MPA-11). ■

Innovative nano S&T focus of 2020 CINT annual meeting

Echoing the Center for Integrated Nanotechnologies (CINT) vision of "one scientific community focused on nanoscience integration," the national user facility recently held its annual meeting—this year as a first-ever virtual conference.

The three-day event showcased the innovative research in nanoscience and nanotechnology carried out by CINT scientists and users and brought together 335 members of national laboratories, academia, and industry from around the world.

CINT Co-director Adam Rondinone welcomed participants; CINT Director Jeff Nelson presented an update on the Office of Science national user facility jointly operated by Los Alamos and Sandia national laboratories; and Associate Director of Science for Basic Energy Sciences Linda Horton presented an update of DOE priorities and perspectives.

Plenary speakers Chris Schuh (Massachusetts Institute of Technology) spoke on "Frontiers for stable nanocrystalline materials," Amir Yacoby (Harvard University) on "Quantum sensing of quantum materials," and Lena Kourkoutis (Cornell University) on "Cryo-EM for applications in life sciences and the physical sciences."

Parallel symposia, organized by staff from Sandia and Los Alamos, focused on advances in soft matter imaging, nanostructure materials, and quantum information sciences and featured nearly 40 invited speakers. Poster sessions featured the work of nearly 50 researchers who took questions in a lively Q&A session in conjunction with their pre-recorded three-minute poster presentations.

Technical contact: Adam Rondinone ■

HeadsUP!

What's that alarm? What must I do? Am I in danger?

Take required training before Winter Closure

The Laboratory wants you to know exactly what to do when low-oxygen and other safety alarms go off. That's why all employees are now required to take UTrain course #50249, "Off-Normal Alarm Response, Who You Gonna Call?"

Due date: Be sure you watch the training video and request credit by Friday, Dec. 18.

Laboratory senior leadership created a nine-minute training video in partnership with Global Security's Nuclear Engineering and Nonproliferation (NEN) Division in response to two 2019 incidents involving low-oxygen alarm responses when working with cryogens. The training video is unique in that staff members who were involved in one low-oxygen alarm incident, not actors or cartoon animations, tell the story of their experience and the critical lessons learned.

"This important safety message reviews lessons learned from a recent low-oxygen event and teaches valuable life-saving measures," said Deputy Laboratory Director for Science, Technology and Engineering John Sarrao. "Laboratory alarms are designed to alert individuals of possible life-threatening situations. Knowing what actions to take once an alarm is triggered is crucial."

In the video, the viewer is welcomed by Sarrao, who stresses the importance of immediate actions, including calling the Emergency Operations Support Center (EOSC) at (505) 667-2400, when responding to any alarm on Laboratory property.

NEN Division Leader Mary Hockaday and two staff members then take the viewer through what happened the day of the incident and discuss what they have learned in hindsight, emphasizing the real-life danger associated with low oxygen, importance of pausing work, and immediately taking corrective actions. ■

Celebrating service

Congratulations to the following MPA Division employees celebrating service anniversaries recently:

Andrew Dattelbaum, MPA-DO . . . . . 20 years
Troy Semelsberger, MPA-11 . . . . . 20 years
Jinkyoung Yoo, MPA-CINT . . . . . 10 years
Vamshi Chillara, MPA-11. . . . . 5 years

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To submit news items or for more information, contact Karen Kippen, ALDPS Communications, at 505-606-1822 or aldps-comm@lanl.gov.

For past issues, see www.lanl.gov/org/ddste/aldps/materials-physics-applications/materials-matter-archive.php.

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